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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/532,687	03/22/2000	David W. Livingston	97-1834	8857

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Intellectual Property Office
The Pennsylvania State University
113 Technology Center
University Park, PA 16802

EXAMINER

CLARDY, S

ART UNIT

PAPER NUMBER

1617

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/532,687	LIVINGSTON, DAVID W.	
	Examiner	Art Unit	
	S. Mark Clardy	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-8,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-8,10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claims 1-4, 6-8, 10, and 11 are pending in this application.

Applicant's claims are now drawn to compositions comprising:

N fertilizer	(claim 7: isobutylenediurea ¹)
Surfactant or wetting agent	(claim 4: nonionic)
Metal salt	(claim 3: copper, zinc, or iron sulfate)
Acidic pH adjusting agent	(claim 10: for pH 2-6; claim 11: acetic acid).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-8, 10, and 11 are again rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Pace et al (US 4,507,142), Young (US 4,214,888), and Moore, Jr. (US 4,297,130).

Pace et al, again, teaches aqueous (col 7, lines 40-53) foliar fertilizer compositions comprising an alpha-oximino alkanoic acid component (abstract) in combination with a second essential ingredient, i.e., one or more sources of nitrogen, particularly conventional water soluble N-fertilizer compounds such as urea, ammonia, and ammonium and nitrate compounds, and water soluble urea and formaldehyde condensation products (col 6, lines 12-35). Other optional micronutrient components include water soluble salts of zinc, iron, copper, or other metals, such as their sulfate salts (col 7, lines 54-61), and surfactants (col 8, lines 54-61), including non-ionic surfactants (col 9, lines 29-38). The utility of isobutylene diurea, and acetic acid as a pH

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adjusting agent, are not disclosed. Minor amounts of phosphorus may also be included in the compositions (col 11, lines 32-35: 0.5 – 35% P as P_2O_5 ; claim 17: “including a minor and effective amount of phosphorus”).

Young, again, teaches foliar fertilizer compositions characterized by low phytotoxicity, low corrosivity, and improved toxicity stability comprising urea nitrogen and a pH buffer which maintains the pH between 6 and 7.6 (abstract, col 3, lines 59+). The pH may be “reduced below 6, i.e., to the level of 5 or below when corrosion resistant systems are available” (col 4, lines 2-5); thus, contrary to applicant’s assertion, a pH of 6 is not the lower limit. Suggested buffering systems include those with acetic acid (columns 5-6; col 5, lines 40-45; col 6, lines 34-37). The compositions may further contain micronutrients such as sulfate salts of copper, zinc, and iron (col 7, lines 20-30), and surfactants (col 4, lines 28-31). One of ordinary skill in the art would be motivated to combine the pH buffering systems of the foliar fertilizers of Young with the foliar fertilizer compositions of Pace et al in order to gain the low corrosiveness of Young. As applicant points out in the response, Young states that “phosphorus compounds should be avoided except when used in the minor amounts and particular compositions defined herein” because of complications in balancing appropriate pH buffering with intrinsic ammoniacal nitrogen toxicity (col 3, lines 21-31). However, it is not agreed that this teaching is in opposition to that of Pace et al because, while Pace et al allow for the presence of phosphorus compounds in the foliar applied nitrogen fertilizers therein, the amounts are described as being “minor” – the same term used in Young et al pertaining to the limited useable amounts of phosphorus.

¹ A condensation product of isobutyraldehyde and urea with a minimum total N of 30%: $iPr-CH(NHCONH_2)_2$

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Moore, Jr., again, teaches that it is advantageous to include both an immediate release (water soluble) N-fertilizer and a slow-release (water insoluble) N-fertilizer, in sprayable foliar fertilizer compositions. The insoluble component slowly breaks down into soluble N-fertilizer compounds which may then be assimilated by the plant (columns 1-2). Representative water insoluble N-fertilizer compounds include isobutyl diurea and other urea condensates (col 2, lines 51 – 55). Applicant points to a Example 1 in column 3 as an indication that the pH of the compositions of Moore are above those required in the instant invention. However, this discussion of pH pertains to controlling reaction parameters in the process of making the isobutylene diurea; like Pace et al, above, Moore is silent with respect to the pH of the disclosed foliar fertilizer composition. One of ordinary skill in the art would be motivated to combine the slow release isobutyl diurea component of Moore, Jr. with the foliar fertilizer compositions of Pace et al in order to gain the benefit of having N-fertilizer components released over a longer period of time.

Thus, again, it would have been *prima facie* obvious to the ordinary artisan to have combined applicants' N-fertilizer, surfactant, metal salt, and acidic components in a single composition because the prior art teaches that such components are well known in the foliar fertilization art. Further, Young teaches the utility of acetic acid containing buffer systems for improving the corrosivity characteristics of foliar applied fertilizer solutions that may overlap applicant's pH range, while Moore, Jr. teaches the additional benefit of providing a slow release N-fertilizer component such as isobutyl diurea in an aqueous foliar fertilizer composition. Further, contrary to applicant's assertion that the amounts of phosphorus discussed in Pace et al and Young are contradictory, phosphorus compounds are disclosed as a secondary or optional

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component in both references which should be present in “minor amounts”, as noted above. The discussions of phosphorus compounds in these two references do not render their disclosures mutually exclusive.

Finally, each of the cited references pertains to components which are useful for formulating foliar applied fertilizer compositions. It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose; the idea of combining them flows logically from their having been individually taught in the prior art. In re Kerkhoven, 205 USPQ 1069. One of ordinary skill in the art would be motivated to combined various components which are known in the art of foliar applied fertilizer compositions in order to gain the benefits of each of the compositions as taught in the prior art.

None of the above pertains to methods of controlling moss, the apparent topic of applicant's disclosure; however, no claims are drawn to a method of use – only compositions. The prior art teaches that the components of the claimed composition are all known in the field of foliar fertilizer compositions, and that their combination, although for a different purpose, is at least obvious, if not anticipated. In a claim for a composition, a statement of intended use is of no patentable significance. In re Maeder et al. 143 USPQ 248.

The data presented in the specification demonstrates an improved benefit for the purposes of moss control when applicant's compositions are applied to moss. Note however, that objective evidence of nonobviousness must be commensurate in scope with the scope of the claims. In re Tiffin, 171 USPQ 294. A showing limited to a single species can hardly be considered probative of the invention's nonobviousness in view of the breadth of the claims.

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No claims are allowed.

Independent claims drawn to a method of applying a moss controlling amount of the compositions (as currently claimed in claim 1) to moss would be allowable.

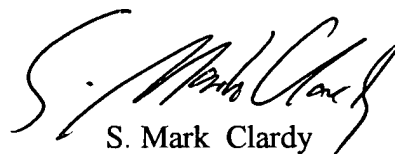
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is 571-272-0611. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Mark Clardy
Primary Examiner
Art Unit 1617

April 11, 2005